## BPG - Prescott, LLC

Dear Ray Williamson and Commissioners:

In consideration that the Arizona Corporation Commission (ACC) is reviewing the Environmental Portfolio Standard (EPS) which requires that regulated utilities produce a portion of their electricity with renewable energy resources, BPG - Prescott ,LLC and The BioPower Group (dba) offers the following attachment.

Most of the states surrounding us have renewable standards of 10% or more. (New Mexico EPS requires 10% renewables by 2011, Nevada 15% by 2013, Texas 2,000MW by 2009, and California 20% by 2017).

We believe the ACC should create a substantially higher standard, at least 10% renewables by 2012 and 20% by 2020. A proscribed standard of this size will make us competitive with the surrounding neighboring states.

BPG - Prescott, LLC 9601 N. 19th Street Phoenix, AZ 85020

Robert T. Baltes, Principal

# The BioPower Group



**BPG – Prescott, LLC** 

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The Arizona Sustainable Technology Park

May 2004

The BioPower Group (BPG)

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This Information Memorandum (the "Memorandum") provides information with respect to the development of a Renewable Energy Plant and Green Industrial Park by BPG. This information is being provided to interested parties who are contemplating participating in the project described herein.

In all cases, interested parties should conduct their own investigation into the matters described herein. This document contains statements and estimates prepared by BPG with respect to future performance of the plant & the park. Such statements and assumptions may not prove to be true. BPG does not make any representation or warranty as to the accuracy or completeness of this Memorandum or any other written or oral communication transmitted to recipients.

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# **Executive Summary**

The BioPower Group (BPG) was formed to develop projects that enhance rural economies, preserve and protect our natural resources and provide an economic

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return for doing so. Our model is scalable and could be developed all along the CANAMEX corridor. BPG – Prescott, LLC is responsible for developing the Renewable Energy Plant and Green Industrial Park in Central Yavapai County. It is our intent to deliver value to stakeholders by obtaining low-cost fuel for power generation and low-cost raw material for conversion into value-added products. The power plant will generate additional profits through the monetization of green tags. Development will be facilitated by the growing legislative and regulatory support of renewable energy. The project envisioned will have a 5 MW biomass energy plant as its base unit. Adjacent value-added industries might include, but are not limited to: wood products, recycling and greenhouse agriculture. The biowaste stream from the value-added industries would, in circular fashion, provide more fuel for the plant. The zero-waste approach accomplishes the goal of developing a green park.

BPG's management team has a significant amount of experience in this area and members are on the leading edge of similar projects. Team members include: the owner/operator of the first biomass plant in the state, and a leading expert on the renewable energy topic. Other members have developed, financed and managed projects both inside and out of the natural resources business.

This business model seeks to help solve forest excess fuel issue with private industry and rural communities being involved through forest remediation to reduce the clear and present danger of catastrophic wildfire to communities and essential infrastructure. County, state, and federal government is taking action to conduct hazardous fuel reduction projects on millions of acres of forestland. This is necessary to reduce fire threat around the wild-land/urban interface (WUI), protect critical watersheds, and preserve natural habitat/endangered species. Through legislation, a readily available wood supply is provided by the need to clean up more than 630,000 acres of burned forest and hundreds of thousands of acres of bark beetle infested trees. Forest thinning is sustainable when annual harvest rates do not exceed re-growth rates and when there is a need to thin forests on a continuing basis to ensure their health.

Government incentives have been established in the push for renewable energy. At the state level, this is referred to as the renewable environmental portfolio standard (EPS.) The EPS mandates that the utility supplying power must produce a level of power from green energy. In Arizona, this level is 1.1%. In contrast, New Mexico has a 10% EPS, Texas 2000MW, while California is 20%. Arizona is discussing raising its level and there is also federal legislation drafted which will mandate that all states are required to have at least 10% renewable energy. Plants producing power from green energy currently qualify for green certificates for capital investment, operating & maintenance (O&M) costs, carbon credits (for producing power without producing excessive SOX or NOX) and other incentives.

There are 1,000,000 acres of woody vegetation in Yavapai County alone. Forests must be cleared in the range of 50,000 to

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100,000 acres per year to make any dent in the problem. Producing power instead of burning, we could make 100 MW to 200 MW of continuous power for endless generations since forests are renewable in the photosynthesis-carbon cycle world.

# **Key Issues**

Currently 190 million acres of land are at unnatural risk to catastrophic wildfire. Of that, over 70 million acres are at extreme risk to catastrophic wildfire in the immediate future. The summers of 2000 and 2002 were the two largest and most-destructive fire seasons in the last 50 years. In 2002 and 2003, hundreds of homes and other structures were destroyed, and thousands of people were evacuated. 23 firefighters lost their lives in 2002. The American taxpayers spent in excess of \$1.5 billion containing 2002's record setting blazes. Rural economies that rely on tourism have suffered significant financial losses.

The Healthy Forests Restoration Act, passed last year, calls for Congress to appropriate more than \$700 million per year to restore the forests. Governor Napolitano has announced that \$58 million has been allocated to Arizona and New Mexico so far (3/2004.) According to the U S Forest Service, that money should flow in 2005. Given the massive scale of the threat that catastrophic wildfire and disease and insect infestation pose to the health of pristine forest ecosystems, threatened and endangered species, air quality, water quality and the safety of thousands of communities, it has become clear to the government that something needs to be done.

#### Solution

Consider a 5 MW biomass power plant located in Central Arizona. The model is scalable and could be replicated in many of the communities around Arizona, the West and the country with similar issues regarding fire and beetle kill. By utilizing wood from the beetle-infested forest to generate power, our plant will be one of the few users of this waste product. Because the plant will be classified green, it will generate carbon emission credits that will be bought by business with higher emission of NOX and SOX such as the larger coal fired power plants. We will locate this plant on a site that will be able to accommodate value-added industries that should assist in supplying fuel to the biomass plant and be a user of the heat generated by the plant.

There is growing recognition that market-based emissions trading systems offer the least-cost method for managing environmental risks. The environmental and economic success of the U.S. sulfur dioxide allowance-trading program to reduce acid rain, as well as other similar markets, provides clear evidence of the benefits of emissions trading on a large-scale. Emissions trading introduces scarcity into the market by establishing limits on overall emissions, specifying firm-level limits,

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and allowing those who can cut emissions at low cost to make extra cuts. Companies facing high costs to cut emissions can comply by purchasing tradable emission rights from those who make extra cuts. The market helps assure efficient use of the limited resource (the environment) and yields a price that signals the value society places on use of the environment. That price represents the financial reward paid to those who reduce emissions, and also indicates the value of creating innovative pollution reduction techniques. BPG and the host utility will a beneficiary of this trend by way of its ability to produce green certificates that can be turned into tradable securities. However, this market is not yet mature enough to support the level required for a biomass power plant.

## **Union Of Concerned Scientists**

We view biomass power as a substitute for natural gas. According to the Union of Concerned Scientists, if average annual natural gas prices were \$4 per million per Btu through 2010, the EPS would save consumers money through 2010, reaching \$918 million (in \$2001.) With natural gas prices of \$5 per million Btu, the RPS would reduce consumers' bills even more, with an overall savings of \$1.8 billion (\$2001) by 2010. If natural gas prices decline to the US Energy Information Administration's projection of natural gas costs (about \$3 per million Btu on average,) the EPS would still save \$360 million between 2003 and 2010 (\$2001.) In the unlikely event that electricity prices fall below \$3, the RPS could add a negligible amount to consumer electricity bills. A cost cap mechanism within the EPS ensures that costs would not exceed \$10.44 per household annually in 2010 and thereafter. Thus the RPS would provide inexpensive insurance against high natural gas and electricity prices and could save consumers billions of dollars.

Further, the Union of Concerned Scientists, recently published that savings of \$11 billion from electricity and & \$15 billion from natural gas could be available if the US would switch to alternative energy. That being, 20% GREEN POWER of the mix by 2020. This according to a model and assumptions of NREL

The Western Governors' Association recently proclaimed in their April 2004 meeting they want 30,000 MW of renewables by 2015.

**Value-added Wood Products** 

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Viewed in isolation, commercial forest thinning is not an economically viable activity. Currently, some wood fiber enters an under-capitalized industry that produces low value products. To turn what has traditionally been considered waste material into products with better commercial applications this industry needs an integrated value chain. In our view, this requires that the Renewable Energy and Green Industrial Park host a technologically advanced small-diameter sawmill that will channel waste back to adjacent biomass power plant.

## **Recycling And Power**

The organization and technology employed within a commercial forest thinning operation must reflect this integrated approach. There are 1,000,000 acres of woody vegetation in Yavapai Count alone. Forests must be cleared in the range of **50,000 to 100,000 acres per year** to make any dent in the problem. Tree densities will be reduced by approximately 70% by removing small diameter trees. Per acre, approximately 30% of the material is suitable for the value-added end-user. The remaining material (about 20 tons per acre) will be chipped and shipped directly to the biomass power plant. Otherwise, the forest wood will be burned into the atmosphere right where it falls in the forest. Producing power instead of burning, we could make **100 MW to 200 MW** of continuous power for endless generations since forests are renewable in the photosynthesis-carbon cycle world. This estimate is for the Yavapai basin alone. If you add in the other forests, consider 300MW to 400MW for Arizona.

## **BPG – Prescott, LLC**

#### Robert T. Baltes, P.E.

Bob is a Certified Cogeneration Professional with the Association of Energy Engineers for 25 years. He founded several consulting engineering companies in Arizona and California, is President of the Distributed Energy Association of Arizona and a past member of the Arizona Board of Technical Registration.

### Michael D. Strasser, MBA

President and founder of Ponderosa Capital an investment advisory company. Mike has an MBA from the University of Chicago and BS in finance from Arizona State University and is a member of the Arizona Department of Commerce's Sustainable Systems Steering Committee.

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